REMARKS

Applicants thank the Examiner for total consideration given the present application. Claims 1-13 were pending prior to the Office Action. Claims 1-13 have been cancelled without prejudice to or disclaimer of the subject matter contained therein and claims 14-21 have been added through this Reply. Therefore, claims 14-21 are pending. Claims 14 and 20 are independent. Applicants respectfully request entry of claims 14-21 presented herein, and earnestly seek timely allowance of all pending claims.

35 U.S.C. § 103 REJECTION – Kobayashi, Mita, Asai, Hershman

Claims 1, 3-4, 6-8, and 10-13 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kobayashi (U.S. Patent No. 6,714,242 B1)[hereinafter "Kobayashi"] in view of Mita (U.S. Patent No. 4,776,031)[hereinafter "Mita"]. Claims 2 and 9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kobayashi in view of Mita and further in view of Asai et al. (U.S. Patent No. 6,271,933 B1)[hereinafter "Asai"]. Claim 5 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kobayashi in view of Mita and further in view of Hershman (U.S. Patent No. 4,092,725)[hereinafter "Hershman"].

Claims 1-14 have been cancelled through this Reply rendering the rejection as moot.

In this instance, it is respectfully submitted that neither Kobayashi nor Mita, alone or in combination teaches or suggests all claim limitations of new claims 14-21.

For example, independent claim 14 recites, *inter alia*, as follows:

> *a plurality of mean preserving interpolation calculation circuits* for determining values of candidate interpolation data DI for the missing pixel such that a mean value of a plurality of pixels constituting an inclusive group of pixels including the missing pixel *is equal to* a mean value of a plurality of pixels constituting a non-inclusive group of pixels not including the missing pixel but being disposed near the missing pixel and *having the same number of pixels as the inclusive group of pixels*, each mean preserving interpolation calculation circuit also selecting one of the plurality of pixels disposed near the missing pixel as a test pixel T, and determining a value of test interpolation data TD for the test pixel *such that a mean value of a plurality of pixels*

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> *equal in number to the inclusive group and including the test pixel is equal to a mean value of a plurality of pixels equal in number to the non-inclusive group of pixels and not including the test pixel but being disposed near the test pixel;*
>
> > . . . wherein
>
> > *a marking circuit* for calculating a difference between actual image data of the test pixels and each of the plurality of test interpolation data TD0-TDn calculated by the left-right interpolation calculation circuit and the mean preserving interpolation calculation circuits as marking data M0-Mn . . . (*Emphasis added.*)

Claim 20 is a method claim corresponding to the apparatus claim 14.

It is respectfully submitted that neither Kobayashi nor Mita, alone or in combination teaches or suggests the above-identified feature of claims 14 and 20.

Kobayashi merely discloses a conventional color *single-chip* solid-state imaging device 12, for which the image processing apparatus performs processing. The imaging device 12 (CCD area sensor) includes, among other features, a color filter 11 with, for example, a Bayer color arrangement of primary colors of red (R), green (G), and blue (B) shown in FIG. 2. The CCD area sensor 12 may independently reads the signal charges of all pixels. Alternatively, a CCD area sensor which does not employ the all-pixel-read method may also be applied. Kobayashi further discloses a signal processing section 13 that applies signal processing such as black-level clamping and white balance to an RGB point-sequential data output from the CCD area sensor 12 and sends the data to a detection section 14 and an interpolation section 15. The detection section 14 detects the most appropriate interpolation method from the input RGB point-sequential data and sends interpolation information to the interpolation section 15. The interpolation section 15 applies interpolation processing to the RGB point-sequential data according to the interpolation information input from the detection section 14, and outputs the result. (*See col. 3, line 57 – col. 4, line 17.*)

Nowhere does Kobayashi teach or suggest that the CCD area sensor 12 includes *a plurality of mean preserving interpolation calculation circuits* for determining values of

candidate interpolation data DI for the missing pixel such that a mean value of a plurality of pixels constituting an inclusive group of pixels including the missing pixel *is equal to* a mean value of a plurality of pixels constituting a non-inclusive group of pixels not including the missing pixel but being disposed near the missing pixel and having the same number of pixels as the inclusive group of pixels, each mean preserving interpolation calculation circuit also selecting one of the plurality of pixels disposed near the missing pixel as a test pixel T, and determining a value of test interpolation data TD for the test pixel *such that a mean value of a plurality of pixels equal in number to the inclusive group and including the test pixel is equal to a mean value of a plurality of pixels equal in number to the non-inclusive group of pixels and not including the test pixel but being disposed near the test pixel*. Conversely, Kobayashi discloses a *single-chip* solid-state imaging device.

In addition, Kobayashi fails to teach a *marking circuit* for calculating a difference between actual image data of the test pixels and each of the plurality of test interpolation data TD0-TDn calculated by the left-right interpolation calculation circuit and the mean preserving interpolation calculation circuits as marking data M0-Mn. Rather, as mentioned earlier, the interpolation section 15 merely applies interpolation processing to the RGB point-sequential data according to the interpolation information input from the detection section 14, and outputs the result.

Mita, on the other hand, discloses an image reading apparatus 100 that includes a line sensor chip that may include a plurality of CCD solid-state image devices (i.e. line sensor chips). The line sensor chips are arranged to read a same line of the image on a share basis with a gap between two adjacent ones of the line sensor chips. Mita does not fulfill the above-noted deficiency of Kobayashi.

At least in view of the above, Applicants respectfully submit that the asserted combination of Kobayashi and Mita (assuming these references may be combined, which Applicants do not admit) fails to establish *prima facie* obviousness of claims 14 and 20 or any claim depending therefrom.

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Asai and Hershman have not been, and indeed cannot be, relied upon to fulfill the above-noted deficiencies of Kobayashi and Mita.

Therefore, Applicants respectfully submit that claims 14-21 allowable over the applied prior art references.

CONCLUSION

All rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Ali M. Imam Reg. No. 58,755 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: April 13, 2010

Respectfully submitted,

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